REMARKS/ARGUMENTS

The Applicants have carefully considered this application in connection with the Examiner's Final Rejection dated August 15, 2006, and the telephonic interview with the Examiner on November 13, 2006. The Applicants respectfully request reconsideration of this application in view of the foregoing amendment and the following remarks.

The Applicants originally submitted Claims 1-21 in the application. In the present response, the Applicants have amended Claims 1, 8, and 15. Support for the amendment can be found in paragraph 9 and Figures 3 and 4 of the original specification. No other claims have been cancelled or added. Accordingly, Claims 1-21 are currently pending in the application.

I.   Rejection of Claims 1-21 under 35 U.S.C. §103

Previously the Examiner rejected Claims 1-21 under 35 U.S.C. §103(a) as being unpatentable over multiple references including: what is taught in the background of the application (referred to as Applicant Admitted Prior Art (AAPA) by the Examiner); U.S. Patent No. 4,562,425 to Turner, *et al.*; and U.S. Patent No. 6,553,087 to Alelyunas, *et al.* In fashioning the rejection, the Examiner cites that Turner discloses a QAM constellation comprising a zero amplitude symbol. (*See* Examiner's Final Rejection dated August 15, 2006, page 3.) The Examiner further cites that Alelyunas discloses a slicer that chooses from a set of possible valid receivable levels which most closely matches a received signal. The Examiner reinforces Alelyunas by citing Messerschmitt & Lee. (*See* Examiner's Final Rejection dated August 15, 2006, page 4.)

7

However, the Applicants do not find where Turner, Alelyunas, or Messerschmitt and Lee alone, or in combination, teach or suggest a zero-amplitude symbol interrupting a periodicity of a constellation of symbols as recited in amended independent Claims 1, 8, and 15. For example, instead of including an aperiodic symbol, Turner discloses arrangements in which all symbols are equidistant from their neighbors, including a zero-amplitude symbol, and that these arrangements are superior to any other known form. (*See* column 3, lines 43-46 and Figures 5, 8, 9, 10, 11, 14, and 15.) Turner further indicates a periodicity of symbols by noting that the invention is particularly advantageous when applied to a provision of symbols which lie at the intersection of three sets of parallel lines, the spacings being equal and the same. (*See* column 12, lines 53-59 and figures 5, 9, 11, and 14).

Alelyunas discloses a receiver having a slicer that chooses from a set of possible valid receivable levels a level, or "point" which most closely matches the current received signal level. (*See* column 3, lines 41-43.) The slicer appears to be a conventional slicer. To provide further support for the slicer of Alelyunas, the Examiner cited Messerschmitt and Lee. (See Examiner's Final Rejection dated August 15, 2006, page 4.) Messerschmitt and Lee describe signal constellations that are rectangular in nature that use a rectangular coordinate system. (*See* Messerschmitt and Lee, page 187 and figures 6-26, 6-27, and 6-28.) Accordingly, Turner, Alelyunas, and Messerschmitt and Lee do not teach or suggest a zero-amplitude symbol interrupting a periodicity of a constellation of symbols as recited in amended independent Claims 1, 8, and 15.

Furthermore, one of ordinary skill in the art would use constellations that are periodic; it would be counter-intuitive to use a constellation that is not periodic. In other words, one of ordinary

8

skill in the art would not be motivated to employ an aperiodic symbol within a periodic constellation of symbols due to the difficulty of reliably matching the aperiodic symbol to a reference symbol of the periodic constellation. Thus, while the combination of Turner, Alelyunas, and Messerschmitt and Lee may teach or suggest mapping received signals on a known constellation in a slicer and selecting the constellation point most close to the received signal level, the Applicants fails to see where the combination would teach or suggest a zero-amplitude symbol interrupting a periodicity of a constellation of symbols as recited in amended independent Claims 1, 8, and 15. This is especially true when considering interrupting a standard constellation, for example a 16-QAM or 64-QAM constellation, with an aperiodic symbol represented by a zero-amplitude symbol.

As such, the combination of Turner, Alelyunas, and Messerschmitt and Lee does not teach or suggest a zero-amplitude symbol interrupting a periodicity of a constellation of symbols as recited in amended independent Claims 1, 8, and 15. Therefore, the cited combination does not provide a *prima facie* case of obviousness of amended independent Claims 1, 8 and 15 and Claims dependent thereon. The Examiner did rely on additional references in previous rejections for some of the above claims. The Applicants do not find where these references cure the noted deficiency of Turner, Alelyunas, or Messerschmitt and Lee as discussed above. Therefore, Claims 1-21 are not obvious in view of the cited combinations. Accordingly, the Applicants respectfully request the Examiner to withdraw the §103(a) rejection of Claims 1-21 and allow issuance thereof.
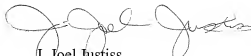
II.   Conclusion

In view of the foregoing amendment and remarks, the Applicants now see all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a Notice of Allowance for Claims 1-21.

The Applicants request the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application. The Commissioner is hereby authorized to charge any fees, credits or overpayments to Deposit Account 08-2395.

Respectfully submitted,

HITT GAINES, PC

J. Joel Justiss
Registration No. 48,981

Dated: November 15, 2006

P.O. Box 832570
Richardson, Texas 75083
(972) 480-8800